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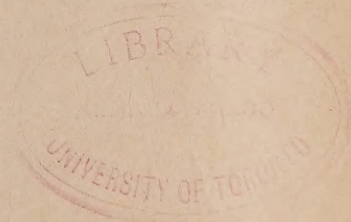
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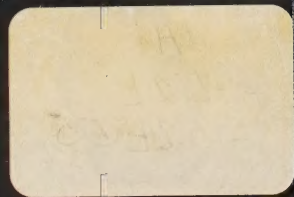
Government
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Employment Outlook For University Graduates

(A survey of Canadian university
faculties undertaken by the Economics
and Research Branch of the Department
of Labour, 1952)

[Ottawa, 1952]





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FOREWORD

It is hoped this report will prove useful to all those interested in enrolment trends within university faculties, in the placement and counselling of graduates as well as to those concerned with manpower utilization in a period of defence preparedness.

The study was made possible through the co-operation of almost ninety Deans of the various faculties in all Canadian Universities, together with the assistance of university placement officers and others. Their ready response to the survey has made possible the preparation of this report and is greatly appreciated by the Department of Labour.

Director,
Economics and Research Branch,
Canadian Department of Labour,
February, 1953.

(Questionnaire to Deans of University Faculties; part of a Survey of expected requirements for professionally trained personnel in Canada, conducted by the Canadian Department of Labour, 1952)

1. For what types of graduates, according to fields of training, in your faculty have employment opportunities increased during the last year or two?
2. In which of these is present student enrolment insufficient to meet the demand?
3. Has there been any noticeable falling off in the demand for graduates in any of the fields included in your faculty during the last year or two? Specify, if any.
4. Please indicate the broad types of university graduates in your faculty for which you expect the demand over the next five years will:
 - (a) increase;
 - (b) remain the same;
 - (c) decrease.
5. What special factors, if any, in your opinion are likely to influence the demand for graduates from your faculty over:
 - (a) the next year;
 - (b) the next five years.
6. In the case of courses in which the demand exceeds the number of graduating students, are there any special impediments which in your opinion are seriously limiting the number of entering students, such as cost of education, limited university facilities, lack of information regarding employment opportunities or inadequate educational background?

OUTLOOK FOR GRADUATES

During 1952, the Department of Labour's Economics and Research Branch undertook two surveys as part of a project designed to examine the factors affecting the future employment outlook for professionally trained university graduates.

One survey, conducted in co-operation with the Executive and Professional Branch of the National Employment Service, asked major employers of university graduates in all regions of Canada what numbers of different professional groups they expected to hire over the coming four years. These projected requirements, discussed in the light of the trends in the economy affecting them, are presented in the Department's Technical Personnel Bulletin, January 1953.

The other survey examined the problem of requirements and trends from a different approach. The deans of various university faculties were asked what trends they have noticed in the expanding or contracting numbers in different university courses in their faculties. A copy of the questions asked of the deans is presented on the opposite page.

The replies of the deans strongly support the view that employment opportunities for most types of university graduates have increased substantially over the past two years. An especially strong upward trend is reported in the demand for graduates of engineering and applied science, the natural sciences, the health and welfare group and for university trained teachers. Most deans expect a substantial increase in the demand for graduates in commerce, mathematics, household science and social science.

In all of the above fields most deans consider that current enrolments may fall short of expected requirements. Shortages of graduates are likely to develop, particularly in many fields requiring additional graduate specialization.

In health services, however, available teaching facilities rather than the level of potential enrolment are cited as the main factor responsible for supplies of graduates falling short of the demand for their services.

While enrolments dropped in many courses following the graduation of World War II veterans, the accumulated pool of graduates was, in most cases, available to meet the peak demand which occurred in 1951. After 1951, falling enrolments in many courses seem to have balanced the somewhat reduced demand for the graduates of these courses. The expectations of employers suggest that requirements over the next four or five years will increase. The reports from faculty deans indicate that current enrolment trends will not in all cases produce sufficient graduates to meet these requirements.

A number of factors are suggested by the deans as likely to influence the future demand for university graduates. The most frequently mentioned are the generally buoyant economic conditions prevalent in Canada, the rate of industrial expansion and resource development, technological innovations, the demands of the defence production program and the armed services, the extent of emigration of graduates and the level and character of government activity, such as for example, the expansion of national health schemes which would increase the demand for the health groups. Other factors mentioned varied by regions and included the St. Lawrence Seaway Project, the activities on the oil fields, and the expansion of social service agencies in some of the provinces.

Among the most frequently mentioned impediments limiting the number of students entering university are the high cost of a university education and the competition from relatively high-paying occupations for which university training is not required. Several deans refer to the lack of information among secondary school students regarding the various university courses and possible

post-graduate employment opportunities. Others refer to the lack of stimulation and inspiration at the high school level which, if it were present, would stimulate more young people of university calibre to begin training for more advanced academic work. Most deans feel the intellectual potential necessary for increased enrolment is present but the various deterrents militate against higher university enrolment.

On the other hand, several replies indicate that, at times, inadequate educational background and the lack of entrance qualifications are important obstacles. In most cases it is believed that no special impediment arises out of limited university facilities with the exception of medicine and dentistry where available facilities largely determine the level of admissions.

SUMMARY BY FACULTIES

Arts and Science

Almost all deans in Arts and Science faculties stress the continuing upward trend in the demand for graduates in the natural sciences and commerce. Most agree that employment opportunities have increased and will continue to do so for chemists, geologists, physicists especially, and to a slightly lesser extent for biologists, mathematicians, commerce graduates, social workers, teachers, psychologists, industrial relations graduates and librarians. A few suggest there may be a decline in the demand for graduates of the humanities, classics, some of the social sciences, excluding commerce, economics and sociology, and for graduates of pass arts courses. One of the deans notes an increasing need for graduates in fine and applied arts, probably due to wider opportunities in commercial art.

In all of these fields where employment opportunities are expected to increase, it is believed that present student enrolment will not be sufficient to fill all of the available job opportunities.

The reports of the deans of Arts and Science faculties reflect the growing trend in the economy towards the wider utilization of professionally trained personnel in both specialized jobs and in all phases of the society's industrial and community life. The validity of their assessment of the adequacy of current and expected enrolment depends largely upon the continuation of a high level of economic activity. Any substantial change in the determinants of economic activity will lessen the validity of current forecasts.

Engineering

All replies indicate a sharply accelerated increase in employment opportunities for engineers of almost all branches of the profession. The deans expect there will be demands over and above the present level of graduation for the next few years. Most deans stress the need for intensifying efforts to encourage suitable students to enter courses in engineering.

The deans expect the greatest demands for graduates to be in mining, aeronautical, chemical, electronic and metallurgical engineering and in engineering physics. There appears to be no noticeable decrease in the demand for graduates in any of the engineering fields although there is perhaps a less rapid increase in the growth of demand for civil and electrical engineers than for other types. This is offset, however, by the growing demand of employers for engineers, regardless of course, to enter in-plant training programs. This latter development is part of a growing trend towards the employment of engineers in sales, administrative and developmental work.

The main impetus behind the demand for engineering graduates is, of course, the general economic expansion of the country. Resource development, the St. Lawrence Seaway, growing petroleum and petro-chemical industries are all special factors likely to influence future requirements for engineers.

The impediments to university entrance mentioned above are all considered by the deans to apply to engineering. In addition, many consider the five-year course in some universities a deterrent to enrolment in engineering compared with the three and four years required in other courses. Several deans believe this might be overcome by increased counselling activity in secondary schools.

Commerce and Business Administration

Deans in all areas of the country state that requirements for commerce graduates have increased and may be expected to remain strong over the next five years. There is a particular need for graduates who specialize in public accounting, investment analysis, selling and industrial relations. It is also expected that increased numbers will be needed in advertising, market research and purchasing.

These deans state definitely that more young people will have to enter their courses if the growing demands of industry and government are to be fully met. One factor mentioned as working against increased enrolment in commerce courses is a lack of understanding on the part of potential students as to what alternative kinds of work exist and can be embarked upon after graduation.

Law

There seems to be a fairly even balance between demand and supply in law, although there has been some increase in openings for young lawyers in large industrial and commercial establishments.

It is expected that this changing emphasis in demand - away from small law firms and general law practice towards entrance into large companies - will continue over the next five years. In the future, more employment opportunities are expected in industrial employment, the taxation field, public international law, the government service and aviation law.

The deans of the Law faculties do not feel that enrolments are too small to meet most of these demands but they point out that if shortages occur they will mainly be in fields requiring considerable specialization. This relates in part to their view that the long course and the high cost of education limit the number of entering students and, to some extent, the degree of specialization.

Medicine

Excellent opportunities exist in most areas of Canada for all types of doctors with the emphasis on public health experts and specialists in anatomy, pathology, bacteriology and bio-chemistry. The armed forces provide another source of demand. One or two replies tentatively suggest that the saturation point may have been reached in some fields of specialization so that the need over the next few years may be for more entrants into general practice.

It is difficult to assess the demand for doctors since subjective evaluations of the need for health services are required. Enrolments at present, however, are as high as current laboratory and teaching facilities will permit and it is doubtful if the numbers of students seeking admission will decrease over the next few years.

Several deans indicate that should a national health scheme or some degree of socialized medicine be introduced, the requirements picture would change markedly. Other influences on requirements mentioned include the possibility of a war and its impact on the supply of doctors.

Dentistry

Replies received from the deans of faculties of dentistry indicate that the demand for dental services has been mounting steadily, due to the increasing population and a growing awareness of the need for dental hygiene.

In all areas except Quebec, where the situation is relatively static, the demand for dentists slightly exceeds the numbers of available graduates. It is expected this will continue and should there be any slackening of demand in urban areas there would still be need for well-qualified practitioners in many rural areas inadequately serviced at present.

As in medicine, limited university accomodation is the main determinant of the number of students entering dentistry, although once again value judgments of need as well as economic considerations influence any evaluation of the adequacy of the numbers graduating.

Pharmacy

Deans report insufficient student enrolment in all fields of pharmacy. Classes have become smaller with the marked decline of veteran enrolment. In contrast to this is the increased number of openings for pharmacists in retail stores, hospitals, drug manufacturing firms and other places where their services are required.

Employment opportunities are expected to continue to expand over the next few years due not only to population growth and the generally high level of economic activity but also to the wider scope of employment alternatives for graduate pharmacists stemming from the greater diversification and higher standards of university courses. Pharmacists with graduate training will also be needed for teaching positions.

Some deans think education costs are high in comparison with remuneration received on graduation.

Nursing

As in most of the other areas of professional employment, the demand for nurses has grown and will in all probability continue to do so over an indefinite period. There is an acute need for teachers and supervisors in schools

of nursing and for public health nurses. Other fields where requirements are expected to increase include psychiatric nursing, institutional nursing and laboratory technicians.

Current numbers of student nurses are insufficient, it is thought, to meet these needs. The rate of loss to more remunerative jobs and to marriage is fairly high and acts as a further drain on existing numbers. Any expansion of federal or other health schemes would also increase the demand for nursing services.

Nurses who have taken university nursing courses are in great demand but the financial considerations involved in training restrict any great growth in their numbers. Several deans mention that lack of appreciation of the type of work involved in the nursing profession deters potential entrants.

Agriculture

The deans of agriculture believe there are not enough registrants at the moment to meet the expected future demand for graduates of agricultural chemistry, agricultural biology, agricultural engineering, agronomy, animal husbandry, marketing, and agricultural organization. At the same time, industrial fields requiring persons trained in agricultural specialties, including the feed industry, meat processing and laboratory control, are expected to have growing demands for new personnel.

Teachers of agricultural and related sciences are needed in several schools and colleges. In Quebec, more bilingual graduates are in demand. Some replies suggest that supply and demand more or less balance in the fields of soil technology and plant breeding and for openings in the Civil Service.

The greatest apparent demand over the next few years for the services of graduates is expected to be for those who have taken specialized studies and

graduate work. The expanding employment of graduates regardless of the type of specialization is likely, however, to more than assure openings for those currently taking courses, after graduation.

Special factors influencing enrolment in agricultural colleges and courses include not only the general level of economic activity in Canada but more particularly the size of foreign markets for Canadian agricultural products. This variable, together with the use of trained personnel for technical assistance programs in other countries and a growing awareness of the benefits of research, will shape to no little extent the future demand for graduates.

Employers, according to the deans, want graduates with good practical experience. One of the impediments to enrolments, however, is a lack of educational background and it is in some cases these very people who have the best practical experience.

Fisheries

In the three main fields of science related to fisheries - biology, technology and economics - the demand for graduates has increased slightly over the last several years and the deans of such faculties expect that, on the whole, the trend will continue.

Some expect that the demand for their graduates might be restricted if the government, which is a major employer, restricted research programs. However, they stressed that more instructors of biology would probably be needed over time in the universities and the high schools.

The School of Fisheries at Ste. Anne de la Pocatière stated that enrolment was inadequate to meet the normal demand for their students. This applied especially to fisheries technology which is concerned with methods of fish catching and processing.

A few of the deans believed that a lack of facilities and intensive fishery research programs in the schools might keep fisheries courses from expanding and marking out new areas for study. Others pointed out that the absence of industrial demand for fisheries biologists kept salaries somewhat lower than the remuneration received by graduates of other scientific fields and this might act as a deterrent to entrants.

Forestry

Over the past few years the employment of forestry graduates has increased steadily. Some of the deans' replies suggest, however, that with one or two exceptions there may be a slight decline from the exceptionally high demand of the immediate post-war period. This is true particularly for forest pathology and entomology.

In most fields student enrolment is sufficient to meet current and expected demand although opinion varies from area to area. In the west, particularly in British Columbia, there appear to be fairly wide opportunities for graduates in general forestry, forestry business administration and forestry engineering. In the east, especially in the Maritimes, the need for specialists in pathology and wildlife may be somewhat less.

In the long run, a steady demand for forestry graduates is anticipated as both government agencies and private industries intensify their activities in forest management. Intensive research is leading to many developments in management and new methods of operation and control. This, in turn, will lead to a sustained demand for most types of trained graduates of forestry courses.

Household Science and Economics

All of the deans surveyed agree that employment opportunities have increased in the post-war period and may be expected to continue to do so for home economics teachers and for institutional and hospital dieticians. Some

deans also see an increased demand for food development workers, food technologists, textile laboratory workers, textile development, and advertising personnel.

While a slight decline may occur in demand for commercial dieticians, most deans expect the upward trend in overall requirements to continue. Defence needs are absorbing many more people for messing and a growing emphasis on dietetics in education is creating a shortage of teachers at almost all academic levels. The demand for more and more qualified dieticians to supervise group feeding is increasing, especially in hospitals and other similar institutions.

Generally speaking, enrolment is reported to be below the expected requirements for home economics graduates. One factor limiting enrolment in this course seems to be a general misconception on the part of the public as to what constitutes university courses in home economics. There is also a lack of understanding of the types of professional work available for graduates.

Education

The deans of teacher training schools believe that serious shortages will develop over the coming several years unless substantially higher numbers of students decide to enter colleges of education.

The increased demand is expected to include: specialists in science, home economics, music, physical training, geography, health, psychologists, directors of training in mental hospitals, guidance counsellors, shop work instructors and secretarial instructors. Several deans believe the current demand will remain about the same over the next few years for language and social science teachers while that for instructors in classics may decline somewhat.

The overall increase in requirements for teachers derives from the growing numbers of young people expected to enter or continue school during the next ten years. At the same time, more specialists are needed. This is, in part,

a result of the new centralized district school systems which make possible the establishment of more specialized courses. A serious drain on the existing pool of teachers comes from their acceptance of more remunerative employment outside the teaching profession.

The same employment alternatives act as a deterrent to entrance into the teacher training colleges. Since entrance into a college involves an added year after graduation, the extra investment is often considered as impracticable in the light of alternative opportunities.

The Comments of Employers on the Value of University Training

Estimates of future requirements for university-trained personnel, as made by the deans of various faculties, reflect to a large extent their evaluation of economic trends and the general employment outlook. The estimates also reflect their observation of the hiring practices of employers respecting their graduates.

It is obvious that employers are finding it useful to hire professionally trained people for all sorts of work as well as for work which necessitates the specialized background acquired in university courses. During the survey of employers' requirements for university personnel, employers were asked about the amount and adequacy of university training among graduates that they had hired. The employers indicate that, in their opinion, present university training is on the whole satisfactory and is being steadily improved. The results depend, of course, upon the individual's ability to utilize his training in the work to which he is assigned.

Employers agree that, generally speaking, university graduates have greater powers of concentration, more ambition, usually meet the public easily, are able to assume more responsibility and after gaining experience, make better supervisors than many non-university employees.

Several employers feel that some university courses, particularly those in the field of engineering, have some shortcomings. Their criticisms could be summed up as: lack of practical experience in applying theoretical knowledge; lack of adequate training in thinking; lack of a good grounding in English and the concise organization of data.

All employers who comment on this question emphasize the need for a consciousness of human relations in industry. Some believe university graduates recognize the importance of these relationships; others think many graduates do not recognize the fact that their ability to get along with people and to encourage others to work in harmony are prerequisites of success.

In talking about the graduate's need for some practical experience before assuming a job, several replies stress the value of summer employment for undergraduates in their chosen fields. They feel such training months are of benefit to both the firm and the individual.

In discussing the adequacy of university courses, some employers note that the employment of an increasing proportion of graduates in their firms is proving profitable. The trend towards employing more graduates appears to be growing and is expected to increase in both absolute and relative terms over the next four or five years, provided the present business outlook is maintained.

